

Breivogel teaches a polishing pad that includes a plurality of circular macrogrooves 47 (Col. 5, lines 4-6). Figures 1, 2, 4 and 6 show that the macrogrooves have substantially the same width and pitch.

Breivogel does not teach or suggest a polishing pad with polishing regions that include substantially circular concentric grooves having different widths or pitches. The Examiner noted that the grooves in the polishing pad of Breivogel may be divided into two or more regions. However, Breivogel discloses macrogrooves having a generally uniform width and pitch (see, Figures 1, 2, 4 and 6). Breivogel provides no motivation or suggestion for making the width or pitch of the macrogrooves in one polishing region different from those in another polishing region. Although Breivogel (Figures 4 and 6) teaches smaller grooves superimposed on the macrogrooves, these microgrooves are arranged radially in order to provide fluid communication among the macrogrooves, rather than as concentric circular grooves as specified in claim 1.

Although Breivogel suggests that the microgrooves may not necessarily be in the radial direction (Col. 7, lines 3-5), the microgrooves would nevertheless have to cross the macrogrooves to provide fluid communication among the macrogrooves. Therefore, the microgrooves cannot be concentric, whereas both the first plurality of grooves and the second plurality of grooves of Applicants' invention are substantially concentric, with one polishing region surrounding the other.

Claims 8 and 12 depend from claim 1 and are allowable at least for the reasons set forth above.

Rejection Under 35 USC 103

The Examiner rejected claims 9-11 and 13 under 35 USC 103(c) as unpatentable over Breivogel. Applicants respectfully traverses the rejection.

As explained above with respect to claim 1, Breivogel discloses a plurality of macrogrooves having the same width. Breivogel provides no motivation or suggestion for providing macrogrooves in different polishing regions with different widths or pitches.

Claims 9-11 and 13 depend from claim 1 and are allowable at least for the reasons set forth with respect to claim 1.

Allowable Subject Matter

The Examiner has indicated that claims 4-7 would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims from which they depend.

Claims 4 and 6 have been rewritten as independent claims. Claims 5 and 7 depend from claims 4 and 6, respectively. As indicated by the Examiner, these claims are allowable.

New Claims

New claim 43 is directed to a polishing pad for polishing a substrate in a chemical mechanical polishing apparatus. The polishing pad includes a first polishing region having a first plurality of substantially circular concentric grooves with a first width and a first pitch. A second polishing region surrounds the first polishing region and has a second plurality of substantially circular concentric grooves with a second width and a second pitch, wherein the second pitch differs from the first pitch.

New claim 44 is directed to a polishing pad for polishing a substrate in a chemical mechanical polishing apparatus. The polishing pad includes a first polishing region having a first plurality of substantially circular concentric grooves with a first width and a first pitch. A second polishing region surrounds the first polishing region and has a second plurality of substantially circular concentric grooves with a second width and a second pitch, wherein the second width differs from the first width.

Breivogel does not teach or suggest a polishing pad with polishing regions that include substantially circular concentric grooves having different pitches or widths. Breivogel discloses a plurality of circular macrogrooves having the same pitch and width, as shown in Figures 1, 2, 4 and 6. Breivogel provides no motivation or suggestion for providing macrogrooves in different polishing regions with different pitches or widths.

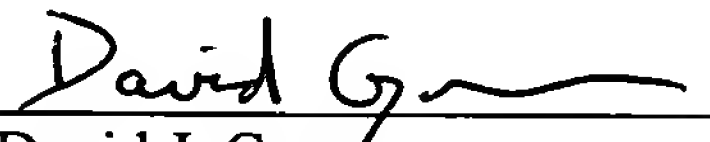
Applicant submits that all of the claims are now in condition for allowance, which action is requested.

If prosecution can be advanced telephonically, for example, by discussion of the differences between the claimed invention and the references, the Examiner is invited to contact the undersigned at 650-322-5070.

Please charge any fees due in connection with this response to Deposit Account
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Respectfully submitted,

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